Repeat Migration and Remittances as Mechanisms for Wealth Inequality in 119 Communities from the Mexican Migration Project Data

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Abstract

To evaluate the distributional impact of remittances in origin communities, prior research studied how migrants' selectivity by wealth varies with migration prevalence in the community or prior migration experience of the individual. This study considers both patterns, and examines selectivity separately in low and high prevalence communities and for first-time and repeat migrants. Based on data from 18,042 household heads in 119 Mexican communities from the Mexican Migration Project, the analyses show that (i) first-time migrants in low prevalence communities come from poor households, while repeat migrants in high prevalence communities belong to wealthy households, and (ii) higher amounts of remittances reach wealthy households. These results suggest that repeat migration and remittances may be mechanisms for wealth accumulation in the study communities. Descriptive analyses associate these mechanisms with increasing wealth disparities between households with and without migrants, especially in high prevalence communities. The study, similar to prior findings, shows the importance of repeat migration trips, which, given sustained remittances, may amplify the wealth gap between migrants and non-migrants in migrant-sending communities. The study also qualifies prior findings by differentiating between low and high prevalence communities and observing a growing wealth gap only in the latter.

Scholarly interest in remittances, funds and goods sent by migrants to their origin families and communities, has grown dramatically in recent years. Estimates indicate that international remittances to developing countries have reached US$240 billion annually in 2007, becoming the second largest source of external finance for these countries after foreign direct investment (Ratha and Xu 2008). Remittance flows relax budget and credit constraints of origin households, and create investment opportunities in origin communities (Durand et al. 1996a; Durand, Parrado and Massey 1996b; Rapoport and Docquier 2006; Rempel and Lobdell 1978; Stark and Levhari 1982; Taylor 1999). These flows also provide a potential pathway for income redistribution to the most deprived regions of the world (Jones 1998).

Remittance flows are particularly important in Latin America, the most unequal region of the world (Hoffman and Centeno 2003) and the recipient of 25 percent of all remittances to developing countries (Castro and Tuirán 2000; Ratha and Xu 2008). The roots of disparities in the region have been traced back to the distribution of land tenure and political influence by the colonial order (Gonzalez 1970; Paige 1997), and more recently to the weakness of democratic institutions (Huber et al. 2006). Research finds that inequality in the region has increased in the past decades (Morley 2001). Studies have linked this trend to international remittances, but yielded conflicting findings. In rural Mexico, for example, Taylor (1992) and Taylor, Adams and Mora (2009) found an equalizing effect of remittances on the income distribution, whereas Mora (2005) and Acosta et al. (2008) observed the opposite pattern.

To reconcile such conflicting empirical patterns, in their seminal work, Stark, Taylor and Yitzhaki (1986) considered how migrants' selectivity by wealth varies with migration prevalence in a community. The authors argued that inequality increases in the early stages of migration, due to positive selectivity of initial migrants by income or wealth, but gradually levels off and

declines as a community reaches high levels of migration. Taylor et al. (2009) and Koechlin and Leon (2007) observed this relationship at the macro level, while in a recent study, McKenzie and Rapoport (2007) tested its underlying assumption at the micro level. Using Mexican data, the latter authors showed that, in communities with a high prevalence of migration, first-time migrants were less likely to be selected on wealth; hence, remittances reached poor households and decreased the overall wealth inequality.

Similar to this prior work, we study how individuals' wealth status is associated with their propensity to migrate and remit to draw implications for inequality. We focus on the largest migration and remittance flows in Latin America, between the United States and Mexico, using data from the Mexican Migration Project (MMP), which contain information on the migration and remittance decisions of more than 18,000 household heads from 119 communities between 1965 and 2008. Similar to Stark et al. (1986), we study patterns of wealth selectivity separately in low and high migration prevalence communities. Inspired by qualitative case studies of Mines and Massey (1985) and Jones (1995), we also consider the cumulative effects of migration, and study patterns of selectivity separately for first-time and repeat migrants.

BACKGROUND

Remittance flows to developing countries have been increasing consistently in the past decade, reaching 20 percent of the GDP in many countries in Latin America and Africa (WorldBank 2008). To evaluate the distributional impact of remittances, some researchers have used macro-level data to link the trends in remittance flows to trends in economic inequality (Acosta et al. 2006; Koechlin and Leon 2007). Others have relied on household-level data and inequality decomposition techniques to measure the contribution of remittances to overall inequality

(Adams 1989, 1992; Barham and Boucher 1998; Stark et al. 1986; Taylor 1992; Taylor et al. 2009). These studies have yielded conflicting findings.

Adams (1989), for example, observed that international remittances increased the inequality in the distribution of income in rural communities in Egypt, but not in rural Pakistan (Adams 1992). Researchers also observed contradictory findings in this paper's national context, Mexico. Stark et al. (1986), Taylor (1992) and Taylor et al. (2009), for instance, all showed that remittances reduced income inequality, while Mora (2005) observed the opposite pattern.

These studies, with the exception of Adams (1989), assumed remittances to be an exogenous source of income. A number of scholars argued for treating remittances as a substitute for migrants' local income (Arroyo and Berumen 2000; Canales and Montiel 2004). Barham and Boucher (1998) showed that, when treated as a substitute for local income rather than an exogenous transfer, remittances increased, rather than decreased income inequality in Nicaragua. Similarly, Acosta (2008) found that remittances had an overall inequality-reducing effect in 10 Latin American countries, but this effect disappeared in some countries if remittances were considered endogenous.

Stark et al. (1986) attributed these conflicting patterns to a link between migrant selectivity and inequality. The authors envisioned an inverted-U relationship of income inequality to migration prevalence, akin to a Kuznets curve, which suggests a similar relationship between inequality and economic growth (Kuznets 1955). Inequality is expected to increase in the initial take-off period of migration, and then to gradually level off and decline as a community reaches high levels of migration. The reason offered for this pattern is the decline in selectivity of migration with increasing migration prevalence. Initial migrants in a community incur high costs to migration, and typically come from middle or upper parts of the income

distribution. As migration gains prevalence, experiences of prior migrants help mitigate the costs of migration, and individuals from lower income strata can afford to migrate. Therefore, in communities where migration is already prevalent, remittances are expected to decrease inequality, with the opposite effect in communities at the initial migration stages.

This curvilinear relationship was supported with evidence from various settings. In their original study, Stark et al. (1986) found a more equalizing effect of remittances in a Mexican village that had a history of U.S. migration, compared to another that had only recently begun to send migrants. Extending this analysis to rural households from 14 Mexican states, Taylor et al. (2009) showed that inequality-reducing effects of remittances were concentrated in regions with high migration prevalence. Koechlin and Leon (2007) generalized this result with data from 78 countries.

In recent work, McKenzie and Rapoport (2007) developed an individual-level model of migrant selectivity to study the relationship between migration prevalence in a community and changes in wealth inequality. Using two data sets from the Mexico-U.S. migration system, including the MMP data used here, the authors showed that, in communities with high migration prevalence, first-time migrants are less likely to be selected on wealth; therefore, remittances reach mostly poor households and reduce the overall inequality.

While these findings largely supported Stark et al.'s (1986) claim of an inverted U-relationship of inequality to migration prevalence, results from qualitative case studies provided abundant counter evidence. Comparing four Mexican communities at progressively advanced stages of migration, Jones (1998) suggested an N-shaped pattern of inequality. Specifically, in the initial 'innovation' stage, migrants are positively selected from households that are already well off, and socio-economic inequality increases in a community. In the subsequent 'early

adopter' stage, migrants are drawn from an increasingly diverse pool, and inequality decreases. In the final 'late adopter' stage, migration reaches saturation, and with no new migrants to be drawn in, socio-economic inequality increases once again as migrants continue to advance economically while non-migrants fall further behind.

Focusing on single or a few communities in Mexico, other scholars observed a gap between migrants and non-migrants. Reichert (1982) found a highly differentiated class structure in a community in Michoacán, where legal U.S. migrants occupied the highest economic ranks, followed by undocumented migrants and non-migrants. Mines (1981) and Mines and de Janvry (1982) reported wealth disparities in a community of Zacatecas, where committed U.S. migrants owned more land than either temporary migrants or non-migrants. Dinerman (1978) and Wiest (1973) observed a similar pattern of economic differentiation in Michoacán as did Cohen (2001) in Oaxaca.

A number of studies highlighted the cumulative aspects of migration-induced inequality. Mines and Massey (1985) noted an increasing concentration of land in the hands of U.S. migrants in two communities in Zacatecas and Michoacán. These migrants accumulated more land and properties, the longer they had been migrating. Similarly, in his study of four communities in Zacatecas, Jones (1995) observed that migrants' possessions increased in proportion to their experience in the United States.

EMPIRICAL STRATEGY

Data

This study employs the Mexican Migration Project (MMP) data from 119 communities located in major migrant-sending areas in 21 Mexican States. Each community was surveyed

once in this period, during the winter months, when migrants are likely to visit their origin households.[1] Detailed migration information was obtained from about 200 randomly selected household heads, mostly men, in each community. These data, collected retrospectively in a life history survey, allow us to observe migration and remittance decisions of more than 18,000 household heads from multiple communities (ranging from small villages to metropolitan areas) over several years.

The MMP data are not strictly representative of the Mexican population. Yet, prior work found that these data yield an accurate profile of the U.S. migrants in Mexico, consistent with national data (Durand, Massey and Zenteno 2001; Zenteno and Massey 1998). The data contain information on migrants who have returned to Mexico, or who have at least one household member remaining there, and cannot capture permanent migrants who have taken their whole household to the United States. A selective focus on migrants with at least one household member in Mexico is not problematic given our interest in the inequality in origin communities, which, by definition, no longer include migrant households living permanently in the United States. The exclusion of permanent U.S. migrants does, however, lead us to overestimate the amount of remittances sent by Mexican migrants. Specifically, our monthly remittance estimates for first-time ($405) and repeat ($436) migrants, shown in Table 1, are higher than those of Banco de México, which put monthly remittances in the range of $267 to $410 in 2000-2005. These latter estimates, however, also overstate the actual amounts (Tuirán and Santibáñez 2006) as they conflate family remittances with private transfers (Lozano 2003). Indeed, more reliable

[1] Detailed information about the MMP is available at http://mmp.opr.princeton.edu. The 5 communities surveyed as part of the pilot study in 1982 are excluded, as are the data collected non-randomly from a small number of migrants in the United States.

estimates, such as Lowell and de la Garza's (2002) based on U.S. household surveys, yield the much lower average monthly remittance amount of $221.

Modeling Approach

This study investigates how individuals' wealth status is associated with their migration and remittance behavior to draw implications for inequality. Prior worked showed how wealth affects migration differently depending on the prevalence of migration in the community (Stark et al. 1986) or the prior migration experience of the individual (Jones 1995; Mines and Massey 1985). Our analysis considers both patterns. We start with two models to estimate the effect of wealth on individuals' (i) first and (ii) repeat migration trips, and thus, to test whether this effect varies by individuals' prior experience. We then employ four models to estimate the effect of wealth on individuals' (i) first and (ii) repeat migration trips in (iii) low or (iv) high migration prevalence communities. These models test how the effect of wealth on migration varies jointly by individuals' prior experience and a community's migration experience.

We test how wealth affects the amount of remittances in the overall sample, rather than separately for first and repeat migration trips, or in low or high migration prevalence communities, to preserve statistical power. Information on remittances is collected for the last migration trip only, and available for only a small share of the sample (3,096 out of 487,305 person-years).

Because remittances are only observed for migrants, a non-random segment of the population, an accurate evaluation of wealth-remittance relationship requires a correction for migrant selectivity. To pose the problem formally, let the amount remitted by individual i be represented by y_{1i} and governed by the following equation:

$$y_{1i} = \boldsymbol{x}_{1i}\boldsymbol{\beta}_1 + \varepsilon_{1i} \qquad (1)$$

where $\boldsymbol{x}$ represents a vector of independent variables, $\boldsymbol{\beta}$ is the corresponding vector of coefficients, and ε is the identically and normally distributed error term. Let migration decision of individual i be represented by a binary dependent variable y_{2i} generated by a probit equation and related to an unobserved latent variable y_{2i}^* as follows:

$$y_{2i}^* = \boldsymbol{x}_{2i}\boldsymbol{\beta}_2 + \varepsilon_{2i} \qquad (2)$$

$$y_{2i} = \begin{cases} 1 & \text{if } y_{2i}^* > 0 \\ 0 & \text{if } y_{2i}^* \leq 0 \end{cases}$$

We observe y_{1i} if and only if a person migrates ($y_{2i} = 1$). This leads to a specification where the probit equation (2) for migration is completely observed, but for the remittance equation (1), we have a selected sample. In the case of a non-zero correlation (ρ) between the error terms $(\varepsilon_{1i}, \varepsilon_{2i})$, separately estimating the migration and remittance equations will lead to selectivity bias in the estimates of the latter. We account for this bias with Heckman's (1979) two-stage selection model, which calls for an independent variable, known as an instrument, in the migration (selection) equation that is not included in the remittance (outcome) equation. This restriction is not strictly required for identification. However, if the set of regressors are identical for the selection and outcome equations, the estimation is poor due to high multicollinearity (Berk 1983).

Hoddinott (1994) employed a Heckman two-stage model of remittances to control for migrant selectivity in the Kenyan setting. Taylor et al. (2003) and Mora (2005) recently used a similar model of selection-correction in the Chinese and Mexican settings, respectively. Both studies used an indicator of community migration prevalence as an instrument, but did not test its validity for identification. Given that migration prevalence is likely to be related to unobserved

community conditions (e.g., lack of job opportunities), which also affect remittance patterns, one might suspect that this instrument may not satisfy the exclusion restriction.

This study addresses this issue with an alternative instrument, the interaction between community migration prevalence and distance to the U.S. border. The intuition is as follows. Individuals living in communities far to the border typically face higher costs to migration. The detrimental effect of distance on migration should be lower in communities with high migration prevalence, as prior migrants provide useful information or help. The effect of distance on the amount remitted, however, should not vary with the community migration prevalence. A supplementary analysis presented in Appendix B evaluates the validity of these assumptions.

Operational Measures

The sample for the study is 18,042 *household heads* from 119 Mexican communities. Life history survey provides a panel data set of individuals' migration decisions from 1965 (the end of the Bracero program) to 2008 (the year of the last survey). All the moves an individual makes until the survey year are recorded, yet information about remittances is only collected for the *last migration trip* to avoid recall bias. Therefore, the migration model is estimated with data from all migration trips, whereas the remittance model is estimated with data from the last trip only. The person-year observations are supplemented with contextual information from the household and community surveys, several macro-economic indicators provided by Massey and Espinosa (1997), and geographic data collected by the author.

The dependent variables are a binary indicator of whether a person migrated to the United States in a year, and the amount of remittances sent or savings brought home by a migrant in that year. For the purposes of this study, both transfers are considered as remittances. The total

amount of remittances is computed by multiplying the duration of the last trip by monthly remittances and adding up the total savings brought by a migrant upon return. The monthly amount (total divided by the duration of the last trip) is converted to constant US dollars (in year 2000) and used in logarithm form in analysis.

The key independent variable is household wealth. Household income is measured in the survey year alone, therefore does not permit a longitudinal analysis. Household land and properties, on the other hand, are recorded in each year, and provide useful proxies for household wealth. We compute the total value of household land by multiplying the hectares owned with the average price of land in the community (in 2000 US$).[2] Focusing on value, rather than amount, assures that land owned in a rural area is not treated equally as land in a more expensive, urban region. There is no information on average property values in the community survey. We use the total number of rooms in household properties as a proxy for their value. Land and property measures are used in logarithm form to take into account their skewed distribution, lagged by a year to prevent simultaneity with migration decisions, and standardized to mean 0 and standard deviation 1 for comparability. Figure A1 in Appendix A shows histograms for logarithms of land, properties, remittances and savings (non-zero values only), which are approximately normal in distribution.

Several individual characteristics related to migration and remittance behavior are included in models: age, sex, education (primary, secondary, advanced), marital status (also if spouse is in the United States), and the number of children in the household. Prior research shows that individuals are more likely to migrate if they have prior migration experience, or if they are related to prior migrants through household or community ties (Massey and Zenteno

[2] Municipality or state average prices are used for communities with missing values.

1999). To capture this pattern, we measure individuals' prior migration experience by their accumulated number of U.S. trips. Prior household experience is measured by an indicator of whether an individual's parents were U.S. migrants. Community experience is captured by migration prevalence ratio, defined as the proportion of individuals who have ever migrated in a community. Level of inequality in community is measured by the gini coefficient of household land. Land tenure arrangements are captured with an indicator for whether community ever had ejido (communal) land.[3] Agriculture production is highly dependent on weather conditions, and differences across communities in this respect are controlled with an indicator of average rainfall to the state in the past three years. Community distance to the U.S. border is included as a proxy for costs of migrating.[4] State and year indicators account for the geographic or temporal patterns not captured with the independent variables.

Indicators for migrant characteristics are only included in remittance models. Prior research finds remittances to be a repayment for migration costs incurred by the household, a

[3] Ejido indicator is missing for five communities. We set the indicator to zero in these communities to conserve sample size, however, the results remain identical if these communities are excluded from analysis.

[4] We tested the robustness of our findings to two alternative measures of community distance to the United States: (i) distance to the closest international airport in Mexico, and (ii) distance to the closest popular border crossing city, which include Tijuana or El Paso, TX prior to 1993 and Laredo, TX, El Centro, CA and Nogales, AZ thereafter according to Orrenius (2006) and Singer and Massey (1998). The former measure takes into account the transportation networks in Mexico, while the latter considers the shifting enforcement zones in the United States. Both measures led to similar results in all models (available upon request).

pattern considered with an indicator for whether family paid for coyote (smuggler) fees. Prior work also shows that remittances decrease as migrants' ties to origin weaken over time (Durand et al. 1996a), which is captured by indicators of years since an individual migrated, and whether migrant has U.S. documentation. Other control variables are migrants' monthly wages (in 2000 US$), and binary indicators for their destination (Northeast, Midwest, South and West).[5]

[TABLE 1]

Table 1 displays means for all variables separately for non-migrants, first-time migrants and repeat migrants along with results from cluster-adjusted difference-of-means tests comparing first-time migrants to non-migrants, and repeat migrants to first-time migrants. (First-time migrants are individuals who have migrated once, considered non-migrants prior to their first trip. Repeat migrants are individuals who have migrated more than once.)

Compared to non-migrants, first-time migrants are significantly younger, more likely to be male, married and with a spouse in Mexico or the United States. First-time migrants are more likely to have parents who were U.S. migrants, and to live in communities with a high proportion of migrants and with prior ejido land arrangements. Interestingly, repeat migrants differ significantly from first-time migrants in most variables. Compared to first-time migrants, repeat migrants are older, less educated, more likely to be married or to have children. Repeat migrants

[5] Because wage in destination is a critical determinant of remittance behavior, migrants with missing wage information (about one-third of all migrants) are not used in the analysis. Alternative analysis with all the migrants, and without the wage variable, leads to similar wealth coefficient estimates (available upon request).

come from communities where migration is already prevalent, and where cultivation may have recently suffered from low levels of rainfall. Repeat migrants are also more likely than first-time migrants to have documentation in the U.S., and to have higher amounts of savings upon return.

Most importantly, repeat migrants are significantly wealthier than both non-migrants and first-time migrants. In the average person year, a non-migrant owns $4,191 in land (2000 US dollars), an amount that is not statistically different from the $4,907-worth of land owned by first-time migrants. A repeat migrant, by contrast, owns $10,584 in land, more than double the value owned by non-migrants or first-time migrants ($p < 0.05$ in difference-of-means test adjusted for individual-level clustering). Similarly, both non-migrants and first-time migrants own properties with an average of 2 rooms in the year under observation, while repeat migrants own properties with more than 3 rooms ($p < 0.05$).

Similar to prior research in the Mexican setting, we find that migrants are positively selected on wealth (Cohen 2001; Dinerman 1978; Durand and Massey 1992; Massey, Goldring and Durand 1994; Mines 1981; Reichert 1981). By separating first-time and repeat migrants, however, we provide an alternative explanation for this selectivity. Prior research suggested that migrants originate from wealthier households because those households can afford the costs of migration. If that were the case, we would expect first-time migrants to be wealthier than non-migrants. Instead, we see that first-time migrants have similar levels of wealth as non-migrants, but are significantly poorer than repeat migrants. This pattern suggests that migrants may be accumulating wealth through repeated migration trips to the United States.

[TABLE 2]

To test the plausibility of this explanation, similar to Jones (1995), we compare the average household wealth across different levels of migration experience. Table 2 shows that the average value of land and number of rooms in properties increase with increasing prior U.S. trips. Thus, individuals who have taken 1 or 2 trips are significantly wealthier than those with no trips, and those with 3 or 4 trips are significantly wealthier than those with 1 or 2 trips, and so on ($p < 0.05$). The only exception to this pattern comes from individuals with 5 or more trips, whose land possessions are not significantly more valuable than those of individuals with 3 to 4 trips. These findings, based on data from 119 communities in 21 states, generalize similar patterns observed by Cohen (2002) in 13 communities in Oaxaca, Jones (1995) in 4 communities in Zacatecas, Mines and de Janvry (1982) in a community in Zacatecas, and finally, Mines and Massey (1985) in two communities in Zacatecas and Michoacán.

A stronger test of migrant selectivity, however, requires controlling for various contextual factors. Prior research showed how selectivity by wealth depends on the prevalence of migration in a community (Massey et al. 1994; Stark et al. 1986) and the level of inequality in productive resources (Durand and Massey 1992; Stark and Taylor 1991). Prior work also discussed how land tenure arrangements in Mexico shape the distribution of land, and consequently, the context for migration (Goldring 1996). Researchers suggested that the ejido land system, which granted households use of communal land, but required (until 1992) them to farm the land themselves, restricts mobility (Hamilton 2002). Other scholars argued that some ejido plots were less suitable for agriculture, thus, many rural households complemented their income by sending migrants to the United States (Assies 2008; DeWalt and Rees 1994).

The analysis below accounts for these contextual factors with community level measures of migration experience, land inequality, and ejido arrangements. The analysis also controls for

weather conditions, which affect agricultural production, and consequently, migration flows (Munshi 2003). The main patterns of wealth selectivity among migrants identified in the descriptive analysis above remain robust to these (and various other individual- and household-level) controls.

RESULTS

Migration

How is wealth status associated with an individual's propensity to take a first or a repeat migration trip? The two columns of Table 3 report the estimated marginal effects of wealth on the probability of first and repeat migration from a model which includes controls for demographic information, prior migration indicators, community characteristics, fixed effects for state and year. Land and property indicators are in logarithm form and standardized to mean 0 and standard deviation 1. Standard errors are adjusted for clustering at the individual level. The sample in the first column includes non-migrants (individuals who have never migrated) observed annually through the year of the survey, and migrants observed annually through the year of their first migration. The sample in the second column includes non-migrants observed in each year, and repeat migrants observed annually after the year of their first migration.

[TABLE 3]

The results indicate that land and property ownership are strongly associated with the propensity to migrate, although the direction of the effects differ between first and repeat migration. Specifically, one standard deviation increase in the logarithm of land value above its

mean has no effect on the probability of first migration, but generates a 0.08 percentage-point increase in the probability of repeat migration. Similarly, one standard deviation increase in the logarithm of number of rooms in household properties decreases the probability of first migration by 0.03 percentage points, while it increases the probability of repeat migration by 0.14 percentage-points. (Non-linear terms for wealth indicators, found significant in prior work, do not have an effect here, potentially because these indicators are already in logarithm form.)

The differential effect of wealth on first and repeat migration trips confirms the findings of the earlier descriptive analysis. Specifically, even controlling for various individual and contextual factors, first-time migrants are likely to be selected from poorer households, while repeat migrants are likely to belong to wealthier households. These patterns, similar to those in Table 2, suggest that, for repeat migrants, household wealth can be a result of past migration behavior.[6]

[6] The results suggest the potential endogeneity of wealth indicators to migration or remittance outcomes, which may bias the empirical conclusions. To address this issue, we lag the household wealth indicators by a year. This approach does not solve the endogeneity problem if current migration decisions are correlated with past migration, which affect household wealth in the past, or if there are omitted variables related to both wealth and migration. We test for this possibility with a procedure suggested by Spencer and Berk (1981). We estimate two wealth equations (for land and property indicators separately) with exogenous regressors (past rainfall and real interest rates, which are likely to affect wealth). We then add the residuals from these equations to the migration and remittance models as extra regressors. The coefficients for the regressors are jointly insignificant in both the migration (F-statistic = 1.89, p = .39) and remittance (F-statistic = 0.16, p = 0.85) models, and the null hypothesis that the wealth indicators are orthogonal to the

Probability of migrating for the first time decreases with age. Probability of taking repeated trips increases with age and then declines once a threshold age (around 21) is reached. Men are more likely to migrate, partially due to a gender bias in the data, which come from household heads alone. Both first-time and repeat migrants are negatively selected on education, possibly because educated individuals secure desirable jobs in the domestic labor market, and face a high opportunity cost to migrating. In this sample, the likelihood of migrating is lower for individuals with secondary education (compared to those with primary education or less), and lowest for those with advanced degrees. Individuals are more likely to take a first or repeat migration trip if they have a spouse in the United States. Having a spouse in Mexico does not affect the first migration probability, but increases the propensity for repeat migration. Having young children has no effect on migration. Having family members who are prior U.S. migrants and living in a community with a high proportion of prior migrants both increase the likelihood of first and repeat migration. Land inequality in a community is associated with a higher propensity of repeat migration, while the presence of ejido land is associated with a higher propensity of first migration. Rain shortages in a community decrease income from agriculture, and are expected to increase migration. In our case, first and repeat migration is higher in states that have received higher than average rainfall in the past three years. This surprising positive effect may be due to the failure of the state-level rainfall variable to capture the within-state variations, which may be higher than the variation between states. Finally, the effect of distance

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errors cannot be rejected. These results suggest that the lagged wealth indicators can be treated as exogenous to current migration and remittance decisions. Crucially, this treatment does not preclude an association between wealth and past migration and remittances, but such an association does not seem to bias our estimates.

to the U.S. border is non-linear and depends on the migration prevalence in the community (as described in Appendix B).

[TABLE 4]

The results show how migrant selectivity varies over the different stages of individuals' migration careers, and confirm prior findings based on small-scale case studies in the Mexican setting (Jones 1995; Mines and Massey 1985). To test another established finding in the literature, that migrant selectivity varies over the different stages of a community's migration prevalence (Stark et al. 1986), we estimate the migration models separately in low and high migration prevalence communities. We categorize a community as low (high) prevalence in a given year if the proportion ever migrated in a community is lower than (equal to or higher than) the median proportion across all communities in that year.

Table 4 reports the estimated marginal effects of wealth on the probability of first and repeat migration separately for high (panel A) and low (panel B) migration prevalence communities. The results show that the probability of first migration declines with number of properties owned, but only in communities with low migration prevalence. The propensity for repeat migration, by contrast, increases with both land and property ownership but only in communities with high migration prevalence.

Remittances

How is wealth status related to the amount remitted by migrants? The two columns in Table 5 present coefficients from the remittance model estimated with OLS and Heckman's 2-stage least

squares, respectively. The selectivity-corrected Heckman model estimates indicate that the amount of remittances sent by a migrant is strongly related to household land and properties. A standard deviation increase in the logarithm of land value and number of properties above the mean increases the logarithm of remittances by 0.09 and 0.12, respectively. A migrant in an average wealth household sending $1000 a month would send an additional $89 if household land increased by a standard deviation, all else equal. A commensurate increase in household properties would bring an additional $130 to the migrant-sending household. The OLS estimates in the first column are very similar.

[TABLE 5]

The amount of remittances decreases with a migrant's education. Men remit more than women, and the difference is larger in the Heckman estimates, which account for men's higher propensity to migrate. Migrants with spouses in destination remit less in the OLS model, an effect that is smaller in the Heckman estimate. In both models, migrants with children send more remittances; and the longer migrants stay in the destination, the less remittances they send, attributable to a weakening of ties to origin household. Expectedly, migrants earning higher wages in destination send more remittances.

The fact that the Heckman and OLS estimates are almost identical suggests that the unobserved factors influencing migration do not significantly alter the effect of the observed factors on remittances. The insignificant correlation coefficient between the errors of the migration and remittance equations ($\rho = 0.05$) also supports this conclusion. Thus, researchers

estimating a model of remittances in the MMP data can confidently ignore migrant selectivity, given that their intended inference is about migrants only.

To summarize, the results from the migration models establish that wealth selectivity varies depending on the individual's migration experience and the community's migration prevalence. By jointly considering both patterns, this study qualifies some of the findings in prior work. Specifically, like Mines and Massey (1985) and Jones (1995), we show that repeat migrants belong to wealthy households. Considering the insights from Stark et al. (1986) and McKenzie and Rapoport (2007), however, we show that this pattern only holds in high migration prevalence communities. In additional models of remittance behavior, we show that higher amounts of funds reach wealthier households. In combination, these results suggest that repeat migration and remittances may be mechanisms for wealth accumulation. Similar to Jones (1995), the results may also imply a potentially growing disparity between households with migrants and those without them, especially in communities with high migration prevalence. We now present an additional analysis to examine these implications.

Implications for Inequality

We employ a descriptive analysis to trace the changes in the wealth distribution in the 119 Mexican communities over time. Similar to the analyses in Table 4, we divide the communities into two roughly equally sized groups based on the proportion of individuals who have ever migrated by the survey year. Each group contains about 60 communities that share similar migration levels.

[FIGURE 1]

Figure 1 provides a detailed graphical presentation of the changes in the migrant composition, remittance patterns, distribution of wealth and inequality from 1975 to 1995.[7] The top and bottom panels correspond to high and low migration communities, respectively. The panels in the first column display the percentage of first-time and repeat migrants over time. In the low migration group (panel 1b), the migrant population contains about equal shares of first-time and repeat migrants, while in the high migration group (panel 1a) it comprises mostly of repeat migrants.

Prior analyses showed that first-time migrants are likely to come from poor households, while repeat migrants originate from relatively wealthy households. This differential selectivity carries implications for how remittances will affect the overall inequality. That is, in the low migration communities, first and repeat-migrants each comprise about half of the migrant population. Hence the equalizing effects of remittances sent to poor households by first-time migrants can cancel out the inequality-inducing effects of remittances sent to wealthier households by repeat migrants. In the high migration communities, by contrast, repeat migrants make up a larger share of the migrant population than first-time migrants. Then, the inequality-inducing effects of remittances by repeat migrants will overwhelm the equalizing effects of remittances by first-time migrants. This expectation rests on one crucial assumption, however, that repeat migrants send remittances in similar (or greater) amounts compared to first-time migrants.

[7] Communities were surveyed in different years by the MMP, therefore our sample contains a different number of communities in each year. The number of communities is 119 in 1975, drops to 85 in 1995, and then to 48 by 2000. Therefore, we restrict this analysis to the 1975-1995 period, during which the majority of the communities are observed consistently.

To check this assumption empirically, the panels in column (2) of Figure 1 show the average monthly remittances (US$ per capita) sent by first-time and repeat migrants pooled over five-year periods. (Because remittance information is recorded for a migrant's last trip alone, there are a small number of observations per year.) In the pool of high migration communities (panel 2a), remittances per capita increase over time, at a higher rate than the increase in the percentage of migrants (shown in panel 1a), and come mostly from repeat migrants as opposed to first-time migrants. By contrast, in the low migration villages, remittances are much lower, and equally likely to come from migrants on their first or repeat trips. Separate analysis shows that in all villages combined, first-time migrants send $469 on average, compared to $595 sent by repeat migrants. This difference (significant at the 0.001 level) may be attributed to the higher earning potential of repeat migrants afforded by prior experience in destination.[8]

Given that the same individuals migrate repeatedly and continue to send remittances in the high migration communities, households with migrants are likely to accumulate wealth quickly. The panels in column (3) compare the average wealth (number of rooms in properties) among non-migrants, first-time migrants and repeat migrants. (Due to the retrospective nature of the data, older, and consequently, wealthier individuals are observed in later years. To assure that the same age group is compared across time, we restrict the analysis to 25-45 year olds in each year.) In high migration communities (panel 3a), households with repeat migrants own on average 3 rooms, a number that is significantly higher than the 2.5 rooms owned by households of non-migrants and first-time migrants. The differences are negligible in low migration

[8] The estimates in Table 5 showed that remittances decrease by 6 percent per year a migrant spends in destination. These estimates control for earnings differences among migrants, and therefore are not inconsistent with the raw comparisons presented here.

communities (panel 3b), where an average household, regardless of its migration status, owns about 2.5 rooms, a figure that remains constant over time.

These patterns provide further evidence that migration is a mechanism for wealth accumulation, and imply dramatic changes in the distribution of wealth in communities with high levels of migration. To isolate the changes in wealth inequality due to migration and remittance flows, the panels in column (4) show the inequality in the number of properties owned *between* migrant and non-migrant households as a percentage of total inequality (measured with the gini coefficient).

In the low migration communities (panel 4b), the inequality due to differences between migrants and non-migrants is negligible and stable over time. By contrast, in communities with high levels of migration (panel 4a), the inequality between migrants and non-migrants increases dramatically over time. From 1975 to 1995, the share of inequality due to the wealth gap between migrants and non-migrants increases from 0.05 to almost 0.15.

These results are not informative of the overall trends in wealth inequality, which may change due to unobserved contextual factors or idiosyncratic economic shocks. Yet, the results suggest that, between 1975 and 1995, migration and remittance flows may be associated with an increasing divide between households that send migrants to the United States and those that do not, especially in the MMP communities with a high migration prevalence.

CONCLUSION

In a period when inequalities between countries have reached a "great plateau," understanding the disparities within countries has become crucial to predict future trends in global inequality (Firebaugh 1999, 2000). Despite their growing magnitude and importance for

the developing regions of the world, remittance flows have not been considered as an integral component of within-country inequalities. This study focused on the largest contemporary migration stream in the world, which is between Mexico and the United States and generates the largest remittance flows to Latin America, the most unequal region of the world.

To explore the distributional impact of migration-remittance flows in the migrant-sending communities of Mexico, we studied how individuals' wealth status is associated with their propensity to migrate and remit. Using the Mexican Migration Project data from about 18,000 individuals in 119 communities from 1965 to 2008, we first investigated the wealth selectivity of migrants. Prior work suggested that the selectivity would vary by the migration prevalence of the community or the prior migration experience of the individual. Investigating both patterns, we found that first-time migrants in low prevalence communities originate from poor households (with an average $3,305 in land and 2.1 rooms in properties), while repeat migrants in high prevalence communities belong to wealthy households (with an average $11,124 in land and 3.2 rooms in properties). Subsequently, we estimated an integrated statistical model, which treated migration as a mechanism for selection in a Heckman specification of remittances, and showed a higher amount of remittances reaching wealthier households. Based on these results, we suggested that repeat migration and remittances might be mechanisms for wealth accumulation. Using descriptive analyses, we further associated these mechanisms with growing wealth disparities between migrant and non-migrants households, especially in high migration prevalence communities.

These results united the findings from two lines of prior research. First, in their seminal work, Stark et al. (1986) suggested that inequality in a community would initially increase due to the migration of the wealthy, but eventually decline as migration gained prevalence and became

a less selective endeavor. Second, in their case studies of Mexican communities, Mines and Massey (1985) and Jones (1995) found that migrants made multiple trips, sent continued remittances and accumulated wealth over time. This recursive pattern led to an increasing concentration of wealth among migrants, and a growing disparity between migrants and non-migrants.

This study considered these two patterns jointly, and identified the scope conditions for some of the prior findings. Similar to Mines and Massey (1985), for example, we found that migrant households accumulate wealth over repeat migration trips. We also observed an increasing wealth disparity between migrant and non-migrant households. By studying low and high migration prevalence communities separately as Stark et al. (1986) recommend, however, we discovered that these patterns hold only in high migration prevalence communities.

Our statistical and descriptive analysis focused on identifying the potential effect of migration and remittance flows on the wealth inequality between migrant and non-migrants households in 119 communities. We did not consider the impact of these flows on the overall wealth inequality in a community, or on the wealth inequality between communities. Prior research showed the sensitivity of inequality trends to the scale of analysis. Jones (1998), for example, found that migration and remittance flows increased inter-household inequality in 4 Mexican communities, but decreased the inequality between these communities and urban centers. Lozano (2007) similarly observed varying effects of remittances in rural and urban regions. Our study did not investigate such differential effects. Our study also did not consider the 'multiplier' effects of remittances. As numerous studies show, migrants' remittances may increase expenditures in the local economy and create new employment opportunities for both migrants and non-migrants (Adams 1998; Cohen 1999; Cohen and Rodriguez 2005; Conway and

Cohen 1998; Durand 1994; Durand et al. 1996b; Jones 1995; Massey and Parrado 1998; Smith 1998; Taylor et al. 1996; Woodruff and Zenteno 2007). These indirect effects, if taken into account, might alter our conclusions about how remittances shape the wealth inequality between migrants and non-migrants in the MMP communities.

Future work can address this limitation, and study both the direct and indirect effects of migration and remittance flows on inequality, and at various scales of analysis. Researchers can also use a longitudinal research design to investigate trends in inequality, and specifically explore individuals' migration, remittance and wealth trajectories over time. This approach was not possible here because the MMP data only recorded remittances during the last migration trip. Finally, in the Mexican setting, future studies can investigate remittances from all migrants, not just the household heads measured in the MMP, using different data sets (for example, the ENADID, the national demographic dynamics survey from Mexico).

APPENDIX A

Distribution of Household Wealth and Remittances in Mexico

[FIGURE A1]

APPENDIX B

Testing the Validity of the Distance-Prevalence Interaction as an Instrument for Migration

[TABLE B1]

The first column of Table B1 presents the marginal effects of distance by community migration prevalence estimated in a probit model of U.S. migration. Migration prevalence is defined as the proportion of individuals who ever migrated in a community. (The Pearson's correlation between distance and prevalence is only -0.02.) Showing a non-linear pattern, distance to border increases the odds of migrating, while its squared term decreases it. The effect of distance also depends on the migration prevalence in the community. For individuals in zero migration prevalence communities, for example, increasing the distance to border from zero to 1000 kilometers decreases the probability of migrating by about seven-fold. For individuals in medium prevalence communities, where about 13 percent of individuals have migrated, a similar increase in distance decreases the probability of migrating by only three-fold. As expected, the negative effect of distance is concentrated among individuals living in communities with low migration prevalence, and suggest the validity of the interaction term for explaining variation in migration. As an alternative check for instrument validity, we tested for weak instruments by excluding the distance-prevalence interaction from the migration model. The resulting F-statistics was 115.6 (df=487,225), more than ten-fold the lower bound of 10 required to reject the hypothesis of weak instruments (Staiger and Stock 1997).

To provide evidence for instrument exogeneity, which is not directly testable, we examine the partial correlations between the instrument and migrants' U.S. wages, which are strongly correlated with remittances. If the instrument is associated with the unobserved determinants of remittances, we would expect it to be correlated with the observed measures,

such as U.S. wages, as well. The regression results in the second model of Table B1 show that distance to border and migration prevalence in community have statistically insignificant associations with migrants' U.S. wages. Overall the evidence in Table B1 suggests the distance-prevalence interaction as a valid source of identification in the Heckman model.

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TABLES

Table 1. Sample Characteristics by Migrant Status[a]

Variable	Non-migrants	First-time migrants	Repeat Migrants
Household wealth			
Value of household land in 2000 US$ (mean)	4191	4907	10584 *
Number of rooms in household properties (mean)	2.1	2.0	3.2 *
Demographic characteristics			
Age (mean)	37.6	34.1 *	40.5 *
Sex (Male=1) (%)	82.5	94.0 *	98.1 *
Primary education or less (%)	72.2	70.5	85.3 *
Some secondary education (%)	15.0	18.7 *	9.9 *
Complete secondary education (%)	7.5	6.7	3.5 *
Advanced education (%)	5.3	4.1	1.4 *
Unmarried (%)	36.5	30.6 *	14.9 *
Spouse in Mexico? (%)	63.4	66.5 *	81.6 *
Spouse in the U.S.? (%)	0.1	2.8 *	3.5
Number of children under 18 (mean)	2.1	2.2	2.9 *
Prior migration experience			
Trips by individual (mean)	0.00	0.00	2.53 *
Parents U.S. migrants? (%)	6.0	16.6 *	30.5 *
Proportion ever migrated in community (mean)	0.12	0.19 *	0.27 *
Community characteristics			
Community ever had *ejido* land? (%)	89.2	92.4 *	92.4
Land inequality (gini) (mean)	0.86	0.86	0.88
Average rainfall to state in past 3 years in mm (mean)	8.2	7.5	7.1 *
Kilometers to U.S. border (mean)	648	655	666
Migrant characteristics (on last trip)			
Family paid for coyote fees?[b] (%)		13.6	12.0
Have documentation in the U.S.? (%)		24.8	41.5 *
Years since migrated (mean)		2.9	1.9 *
Monthly wages in destination in 2000 US$[b] (mean)		1622	1718
Monthly remittances sent in 2000 US$[b] (mean)		405	436
Monthly savings brought upon return in 2000 US$[b] (mean)		180	263 *
Migrant destination in the U.S. (on last trip)			
Northeast (%)		3.8	2.9
Midwest (%)		12.9	10.4 *
South (%)		22.1	21.8
West (%)		61.2	64.8 *
N (person-years)	430,549	25,284	31,472
n (persons)	17,741	3,096	2,201

a First-time migrants are individuals who have migrated once (considered non-migrants prior to their first trip). Repeat migrants are individuals who have migrated more than once. * indicates the means for an indicator differ significantly ($p<0.05$, two-tailed test) in comparisons of (i) first-time migrants to non-migrants, or (ii) repeat migrants to first-time migrants. Tests account for clustering at the individual level.

b The variable is measured on the migrant's last trip.

Table 2. Household Wealth by Number of Migration Trips to the United States

	No trip	1 to 2 trips	3 to 4 trips	5 trips or more
Value of household land in 2000 US$	4820	7036 *	10747 *	13259
Number of rooms in household properties	2.17	2.35 *	3.01 *	4.13 *
N (person-years)	430,549	36,761	8,651	11,344

* indicates the means for an indicator differ significantly ($p<0.05$, two-tailed test) in comparisons of the person-years in a category to those in the preceding category. Tests account for clustering at the individual level.

Table 3. Estimated Marginal Effects of Household Wealth on First and Repeat Migration[a]

Variable	First migration trip		Repeat migration trip	
	(1)		(2)	
Household wealth				
Logarithm of value of household land in 2000 US$	0.0002		0.0008	***
	(0.0001)		(0.0002)	
Logarithm of number of rooms in household properties	-0.0003	**	0.0014	***
	(0.0001)		(0.0002)	
Demographic characteristics				
Age	-0.0001		0.0003	*
	(0.0001)		(0.0001)	
Age-squared/100	-0.0002	***	-0.0007	***
	(0.0001)		(0.0002)	
Sex (Male=1)	0.0032	***	0.0071	***
	(0.0002)		(0.0005)	
Some secondary education	-0.0010	***	-0.0027	***
	(0.0005)		(0.0005)	
Complete secondary education	-0.0020	***	-0.0041	***
	(0.0002)		(0.0005)	
Advanced education	-0.0028	***	-0.0054	***
	(0.0002)		(0.0004)	
Spouse in Mexico?	-0.0004		0.0016	***
	(0.0002)		(0.0004)	
Spouse in the U.S.?	0.0997	***	0.0295	***
	(0.0157)		(0.0066)	
Number of children under 18 (in 10s)	-0.0001		-0.0005	
	(0.0005)		(0.0010)	
Prior migration experience				
Trips by individual[b]	-		-	
Parents U.S. migrants?	0.0066	***	0.0149	***
	(0.0006)		(0.0019)	
Proportion ever migrated in community	0.0532	***	0.0740	***
	(0.0096)		(0.0197)	

(Table 3, continued)

(Table 3, continued)

Variable	First migration trip (1)	Repeat migration trip (2)
Community Characteristics		
Land inequality (gini)	0.0006	0.0038 **
	(0.0004)	(0.0013)
Community ever had *ejido* land?	0.0014 ***	0.0010
	(0.0002)	(0.0008)
Average rainfall to state in past 3 years in mm	0.0005 ***	0.0008 ***
	(0.0001)	(0.0001)
Distance to the U.S. border (in 100 kms)	0.0026 ***	0.0037 *
	(0.0005)	(0.0016)
Distance-squared	-0.0247 ***	-0.0559 ***
	(0.0038)	(0.0113)
Distance x Proportion ever migrated	-0.0148 ***	-0.0229 ***
	(0.0029)	(0.0063)
Distance-squared x Proportion ever migrated	0.1247 ***	0.2392 ***
	(0.0217)	(0.0500)
State and year indicators	yes	yes
N	400,689	449,824
R^2	0.123	0.245

***p<0.001, **p<0.01, *p<0.05 (two-tailed tests).

a The dependent variable in column 1 (2) is whether a person takes a first (repeat) migration trip to the U.S. in a given year; the estimates are based on a probit model. Standard errors, adjusted for clustering at the individual level, are given in parentheses. Wealth indicators are standardized to mean 0 and standard deviation 1. All models include state and year dummies.

b Individual trips predicts repeat migration perfectly (all individuals with prior trips migrate again), hence are not included in the model.

Table 4. Estimated Marginal Effects of Household Wealth on First and Repeat Migration in High and Low Migration Prevalence Communities[a]

Variable	First migration trip	Repeat migration trip
	(1)	(2)
Panel A. High Migration Prevalence Communities		
Logarithm of value of household land in 2000 US$	-0.00001	0.00136 **
	(0.0002)	(0.0005)
Logarithm of number of rooms in household properties	-0.00022	0.00397 ***
	(0.0002)	(0.0006)
N (person-years)	181,089	228,799
R^2	0.12	0.20
Panel B. Low Migration Prevalence Communities		
Logarithm of value of household land in 2000 US$	0.00014	-0.00008
	(0.0001)	(0.0002)
Logarithm of number of rooms in household properties	-0.00026 **	-0.00002
	(0.0001)	(0.0002)
N (person-years)	219,600	221,025
R^2	0.10	0.11

***p<0.001, **p<0.01, *p<0.05 (two-tailed tests).

a A community is categorized as low (high) prevalence in a given year if the proportion ever migrated in the community is lower than (equal to or higher than) the median proportion across all communities in that year. The dependent variable in column 1 (2) is whether a person takes a first (repeat) migration trip to the U.S. in a given year; the estimates are based on a probit model. All models include indicators for demographic characteristics, prior migration experience and community characteristics as well as state and year dummies. Standard errors, adjusted for clustering at the individual level, are given in parentheses. Wealth indicators are standardized to mean 0 and standard deviation 1. All models include state and year dummies.

Table 5. Estimated Marginal Effects of Household Wealth on Remittances[a]

Variable	OLS		Heckman	
	(1)		(2)	
Household wealth				
Logarithm of value of household land in 2000 US$	0.08	*	0.09	*
	(0.04)		(0.04)	
Logarithm of number of rooms in household properties	0.13	**	0.12	**
	(0.04)		(0.04)	
Demographic characteristics				
Age	0.05	*	0.04	
	(0.02)		(0.03)	
Age-squared/100	-0.07	*	-0.06	
	(0.03)		(0.03)	
Sex (Male=1)	0.65	**	0.71	**
	(0.21)		(0.26)	
Some secondary education	-0.23	*	-0.24	*
	(0.10)		(0.11)	
Complete secondary education	-0.07		-0.12	
	(0.15)		(0.17)	
Advanced education	0.05		0.03	
	(0.24)		(0.24)	
Spouse in Mexico?	0.09		0.06	
	(0.10)		(0.11)	
Spouse in the U.S.?	-0.66	***	-0.62	**
	(0.18)		(0.23)	
Number of children under 18 (in 10s)	0.42	*	0.50	*
	(0.21)		(0.22)	
Prior migration experience				
Trips by individual	0.00		0.01	
	(0.01)		(0.01)	
Parents U.S. migrants?	0.15		0.17	
	(0.09)		(0.10)	
Proportion ever migrated in community	-0.31		-0.19	
	(0.38)		(0.43)	

(Table 5, continued)

(Table 5, continued)

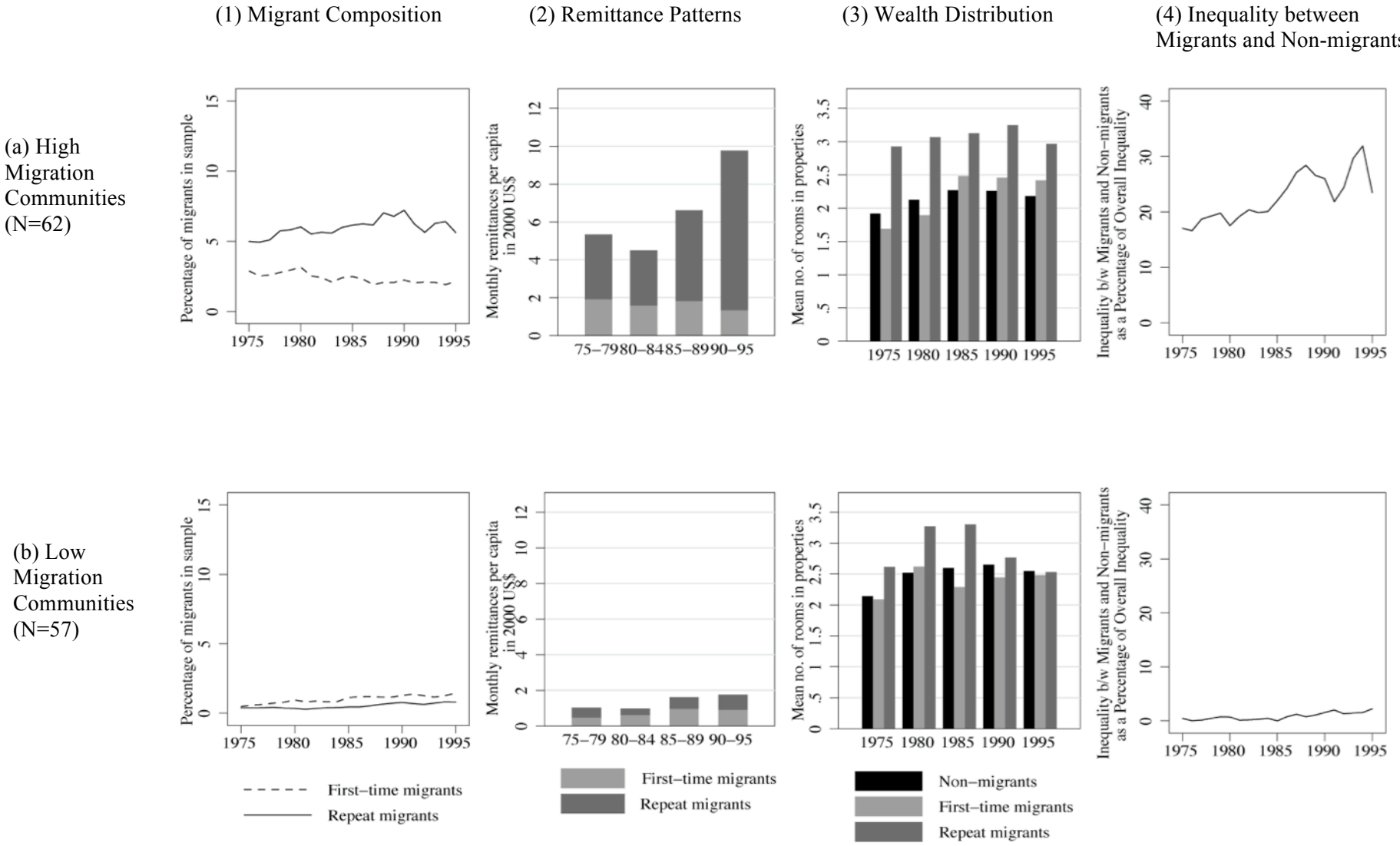
Variable	OLS	Heckman
	(1)	(2)
Community Characteristics		
Land inequality (gini)	0.05	0.11
	(0.20)	(0.25)
Community ever had *ejido* land?	-0.29	-0.29
	(0.16)	(0.15)
Average rainfall to state in past 3 years in mm	0.00	0.01
	(0.04)	(0.04)
Distance to the U.S. border (in 100 kms)	0.63 **	0.64 *
	(0.24)	(0.27)
Distance-squared	-4.83 **	-4.91 *
	(1.73)	(1.92)
Migrant Characteristics		
Family paid for coyote fees?	0.18	0.20
	(0.12)	(0.12)
Have documentation in the U.S.?	-0.03	-0.06
	(0.10)	(0.11)
Years since migrated	-0.05 ***	-0.04 **
	(0.01)	(0.02)
Monthly wages in destination in 2000 US$	0.38 ***	0.42 ***
	(0.06)	(0.07)
Migrant Destination in the U.S.		
Midwest	-0.30	-0.32
	(0.23)	(0.23)
South	-0.30	-0.291
	(0.22)	(0.205)
West	-0.33	-0.31
	(0.22)	(0.20)
State and year indicators	yes	yes
ρ	-	0.05
		(0.08)
N	3,180	478,294
R^2	0.13	-

***p<0.001, **p<0.01, *p<0.05 (two-tailed tests).

a The dependent variable is the logarithm of monthly remittance migrant sent on his or her last trip, and the estimates are OLS coefficients. In the second column, the specification is a Heckman two-stage model of migration and remittances where the exclusion restriction is the interaction between distance and proportion ever migrated in a community. It is estimated via maximum likelihood. Standard errors are given in parentheses. Wealth indicators are standardized to mean 0 and standard deviation 1.

FIGURES

Figure 1. Changes in Migrant Composition, Remittance Patterns, Wealth Distribution and Inequality in High vs. Low Migration Communities in the MMP Data (1975-1995)



APPENDIX TABLES

Table B1. Estimated Marginal Effects of Community Distance to the U.S. Border on Migration and U.S. Wages[a]

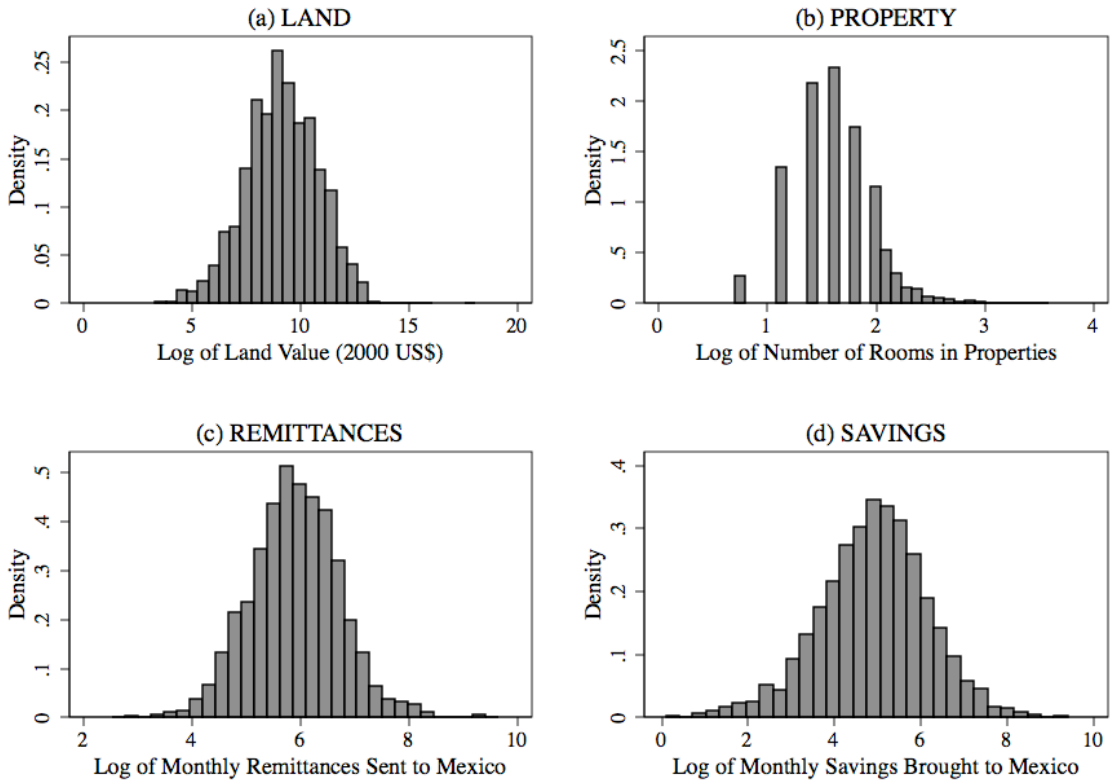
Variable	Migration to the U.S.	Wages in the U.S.
	(1)	(2)
Distance to the U.S. border (in 100 kms)	0.005 **	0.061
	0.002	(0.077)
Distance-squared	-0.075 ***	-0.137
	0.012	(0.584)
Proportion ever migrated in community	0.100 ***	-1.173
	0.027	(1.285)
Distance x Proportion ever migrated	-0.029 **	0.353
	0.009	(0.399)
Distance-squared x Proportion ever migrated	0.309 ***	-2.422
	0.066	(3.071)
N	487,305	3,059
Pseudo - R^2	0.190	0.201

***p<0.001, **p<.01, *p<.05 (two-tailed tests).

[a] The dependent variable in column 1 is whether a person made a migration trip to the United States in a given year, and the estimates are based on a probit model. The dependent variable in column 2 is the logarithm of the wages in the U.S. in a given year, the estimates are OLS coefficients. All models include indicators for demographic characteristics, prior migration experience and community characteristics as well as state and year dummies. The model in column 2 additionally includes indicators for migrant characteristics and destination. Standard errors, adjusted for clustering at the individual level, are given in parentheses.

APPENDIX FIGURES

Figure A1. Distribution of Household Assets and Funds from Migrants



Note: Households with no land (85%) and no property (50%) are excluded from the respective panels (a) and (b). Households with migrants that receive no remittances (21%) and no savings (22%) are excluded from panels (c) and (d).